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VALUATION OF RAILWAY PROPERTY FOR PURPOSES OF TAXATION

All that will be attempted in the present paper is to discuss in a general way some of the larger aspects of this subject from the standpoint of Wisconsin practice and experience. And it must be remembered that the same care and thought cannot be given to appraisals for purposes of taxation as to valuations for purposes of rate regulation. The former must be made each year in large numbers, and only a small amount of money can be expended in the work.

I

While nothing in connection with value is as plain and final as would be desirable, the aim or goal of valuation for purposes of taxation is, in most states, comparatively clear. The object is to find the price at which the property, as a going concern or business, would sell under normal conditions. What the property cost has in this connection no necessary significance.

This fact distinguishes tax valuation from valuation for purposes of rate regulation. The opinions of real experts are now so nearly unanimous to the effect that the two valuations must be distinguished that I would not raise the point were it not for the fact that many persons who might be supposed to know better

still suffer from a delusion in regard to their identity;[1] and in the state of Washington, I am told, an initiative measure making it necessary to employ the same valuation for purposes of taxation and rate regulation was prepared for submission to the people and secured considerable backing, but was thrown out by the courts. It seems unnecessary to discuss this point at length. Valuation for taxation depends primarily upon earnings, and earnings in turn depend upon rates. Tax value, therefore, may be said to be a function of the rates themselves. It is obvious that no such valuation can be employed for the purpose of regulating or changing rates. Those who are disposed to pursue the subject farther may be referred to the citations of authority in Whitten's *Valuation of Public Service Corporations*.[2]

While value for purposes of taxation depends primarily and principally upon earnings, it should be noted that this is not true of every species of property. Nearly all property has a scrap value. At some point above this there is also for property—such as locomotives, cars, some land and some buildings, etc.—what may be called a "dismembered selling value." These facts are of importance in the valuation of the comparatively large number of roads which are insolvent or plainly headed toward insolvency, or, like the logging railroads, are destined to cease operation in the proximate future. They make it very necessary, among other things, to secure a "physical valuation" for the smaller railroads.

The remaining property of railroads must be valued as part of a going concern. The value so determined may fall anywhere between scrap value and cost of reduplication in present condition. This property has little or no value unless the business is alive and going, and how much of this going value it possesses can be ascertained only by reference to the business as a whole. The most valuable property of railroads falls in this class. Much of the roadbed of every railway, for instance, can be valued only as part of a going concern. In the country districts in many instances it could be sold for nothing, and if abandoned would be a detriment to surrounding farm property.

[1] See discussion of this point in the forthcoming *Proceedings of the Eighth Annual Conference of the National Tax Association*, 1915.

[2] Chap. i in both the original publication and the 1914 supplement.

In the case of a very successful road there is an additional value called "intangible value," "franchise value," or "corporate excess." Court decisions sometimes speak of this value as attaching to or inhering in the intangible properties.[1] This seems to me in part inaccurate. It seems to me misleading to say—as was said in one important case—that the intangible values adhered to or necessarily went along with the horses and wagons, so that a horse might for purposes of taxation be valued at one thousand dollars which could be replaced for two hundred. For purposes of taxation it may be better to distribute intangible values along with tangible values than not to tax such intangible values at all or to assign them to the home office of the corporation; but if they must be distributed to particular localities for taxation they may be so distributed on a basis better than that of the tangible property.

Whether tangible property may have a going value in excess of cost of reduplication is therefore questionable. For the moment, however, it is unimportant. The point which I wish to stress is the fact that, excluding scrap value and the comparatively unimportant class of property which has a "dismembered selling value," all the other property of a railroad can intelligently be valued only as part of a going business. This fact alone makes the local assessment of railroads clearly illogical. The truth of this has been generally recognized in recent years, and in nearly every state the assessment of railroads has been intrusted to a state board. However, it is still customary to allow considerable aggregates of railway property to be assessed locally. Both experience and the nature of the valuation process itself point to the conclusion that this local valuation of railway property should be reduced to the smallest possible compass.[2] If properties be left to local

[1] *Chicago and Northwestern Ry. Co.* v. *State*, 128 Wis. 553: "One might as well try to value the life-blood of a horse or his capacity to breathe as try to place a value upon the visible part of railroad property separate from its rights, franchises, and privileges."

[2] In Wisconsin, with some few exceptions, all railway property is assessed by and taxed for the benefit of the state alone. The resulting system is not only simple, convenient, and inexpensive, but it has stood the test of experience, and no proposition for change would, I believe, be seriously entertained now in the state.

assessors the latter are almost sure to start with the cost of reduplication in present condition and then lower this for purposes of safety. But the level of the valuation reached is too high for the less successful roads and too low for the more prosperous roads. In short, it results in a particularly vicious form of discrimination. Moreover, local assessment is sometimes unbelievably inadequate and careless.

II

If the point which I have been making is sound, there follows from it another consequence even more important. For the same reason that local valuation of railway property is bad, state valuation of railway property could advantageously be replaced by federal valuation, or, better still, by co-operative valuation on the part of the state governments acting jointly or through some central bureau maintained by them.

I mention this subject of joint state or federal control because we need to habituate our minds to it. It is an unpopular idea at present. But central control of the taxation of intercommunity properties is now clearly recognized as desirable by all experts in state and local taxation, and they are in favor of state boards or tax commissions practically without exception. These men must be convinced of the inconsistency of championing intercommunity control and yet opposing interstate or joint state control. Just how far should such control go? It should certainly go to the promulgation of binding and uniform rules regarding the allocation or apportionment of revenues and expenditures to the various states. At present there is no uniformity of practice. Each road does as it pleases. The separate state governments cannot fairly act independently in this matter, as uniform treatment is more important than exactly correct treatment (assuming that there is such a thing as an absolutely correct solution of this problem). This is pre-eminently a task for the Interstate Commerce Commission.

This control by the superior jurisdiction, however, should certainly not go to the length of replacing state by federal taxes. Such a proposal would raise dangerous sectional issues; moreover, tax rates, tax burdens, and the service of government vary greatly

in different sections of the country. On this account railway property should in different sections of the country pay the rates prevalent in each. But a general rule or principle for the apportionment of railway property among the various states should—in analogy to the rule governing the taxation of national banks—be laid down by Congress or by joint state action and administered by the Interstate Commerce Commission or a joint state bureau, to the end that competing state jurisdictions should not—by using different methods of apportionment—tax the same property twice; and to the further end that no interstate railway company, by reason of existing laxity and confusion, should escape without the full taxation of all its property in one state or another. To the federal scheme there may be constitutional objections, and I personally would prefer to see control taken by joint action of the states as a concrete evidence of that interstate comity which must be widely recognized if multiple taxation of the vicious variety is to be eliminated.

III

At present, however, each state must make this apportionment, and here a very important question arises: Shall we value the railroad as a system and then apportion a proper part to the state, or shall we first apportion the revenues and expenses and properties—i.e., the ingredients of the valuation—to the state in question and then calculate a state value on this basis?

As a matter of precaution and practice we should do both at this stage in the game of valuation. Some of the elements of valuation—e.g., cost of reduplication—we do not have for the system but do have in particular states. To this extent we must stand on a state basis. On the other hand, the assignment of revenues and expenses to the various states is at present imperfect and variable. Because of this imperfection we should obtain system values and prorate to the particular state, if for no other reason than to check the fairness and equity of the revenue and expense apportionment.

Theoretically, I believe that the method of apportioning the ingredients to the state and building a state valuation thereon is sounder than the alternative method of valuing the system and

distributing among the states interested. I believe that when we are using both methods, as we must do at present, more weight should be given to the state valuation than to the divided-system valuation; and that as the apportionment of the factors or ingredients to the several states becomes more nearly perfect and more nearly uniform, increased weight should be given to the state valuation.

I find myself at this point in conflict with an authority[1] whose opinion I value most highly, and I reserve the right to change my mind on this subject as new evidence is adduced. The point is a very important one in practice and on this account I set forth the reasons for my belief:

Both methods, of course, involve some apportionment. In the state valuation, however, the apportionment of ingredients is far more elastic and admits of far more delicate adaptability than in the case of the apportionment used in the system valuation. Operating expenses in the former method may and probably will be apportioned on a score or more of different bases, each of which is adapted to and approves itself in connection with the particular expense in question. Long and varied experience, particularly in the allied field of state income taxation, wholly convinces me that the liberty to adapt and vary the basis of apportionment is altogether desirable, and that the results arrived at by any general method of apportionment must in particular instances be absurd. It will be noted also that in apportioning or dividing revenues and expenses there will be many which cannot be definitely localized, but must be apportioned in accordance with mileage of some variety. This gives representation to as much of the system-valuation idea as is necessary or essential. The system method of valuation moreover encourages competing and selfish jurisdictions to use the basis or system of apportionment most favorable to them, thus dragging into their states values which equitably belong elsewhere. It is far more difficult to do this with the alternative state-valuation plan.

[1] Mr. T. A. Polleys, tax commissioner of the Chicago, St. Paul, Minneapolis and Omaha Railway, for whose helpful and constructive work in this field every tax commissioner must feel grateful. See "State and Local Taxation," *Proceedings of the Fourth Conference of the International* (now National) *Tax Association*, p. 247.

The divided-system method results in more obvious absurdities than the state-valuation method. One frequently finds a branch or line or division of a prosperous road which does not pay. It might be possible to prove to the exact penny how much it loses, but in a roughly accurate way it is known that it does not pay expenses. The divided-system valuation might assign to such line or division three or four times the valuation that the railroad in question would be glad to sell it for. The Illinois Central Railroad in Wisconsin is an illustration in point. On the other hand, the reverse frequently occurs, and we find a line or division or a stub-end of a road that is known to pay unusually well. The system valuation eliminates or dilutes these local differences. These differences are real, however, and any method of valuation which wipes them out must be *pro tanto* wrong.

In concluding this particular topic, two practical suggestions may be made: Because of the diversity of method now employed by interstate railroads every state tax commission or board charged with the assessment of railroads should check up the apportionments of the several railroads by applying some simple, uniform system of its own. In Wisconsin we use the revenue-train-mile basis for this purpose. The results for the entire group of interstate roads represented in Wisconsin are practically identical with the results as reached by the roads themselves, but in individual cases large differences are shown. The operating expenses assigned to Wisconsin by one system are nearly three times as large as the amount resulting from the revenue-train-mileage apportionment, and last year—in another individual case—the adoption of a uniform method increased the net revenue assignable to Wisconsin by some $278,000. This amount of net revenue capitalized at 6 per cent represents a valuation considerably in excess of four and one-half million dollars, and at the tax rate imposed last year would increase the tax nearly $65,000. The discrepancies revealed by this check constantly bring to light conditions which are indispensable in arriving at an equitable valuation and which would probably have escaped notice if the comparison had not been made.

The other suggestion has to do with the Interstate Commerce Commission. That commission is so beset with momentous

questions that it very pardonably omits things which are not absolutely imposed upon it by the necessities of federal control. I gather, however, that the question of state apportionment is within the province of the commission, or at least that the commission recognizes that it might in this connection render a very real service to the several states, and I believe that if pressure were brought to bear the commission would lay down uniform rules for such apportionment and insist upon their observance by the railroads. The time is ripe for such regulation. For the first time, I understand, the theoretical problem of proper apportionment is within sight of reasonably satisfactory solution. Moreover the railroads themselves have not acquired fixed habits, and up to the present time have not in any important degree modified their accounts so as to bring their aggregate of taxes as low as possible. Similarly, state taxing officials have for the most part developed no fixed ideas on the subject. This flexible and adaptable condition will not last long. Ten years from now it will be ten times as hard to introduce uniformity as it is today. The Interstate Commerce Commission should move in the matter and the National Tax Association—if it be within the scope of its proper activities—might well start a movement for the immediate introduction through the Interstate Commerce Commission of uniform accounting in this respect.

While commercial or taxable valuation depends upon earnings, it is upon *probable future earnings* that it depends. The net earnings of the present and those of the past are significant chiefly in the light which they throw on the future. The clearest light on the future however is in normal cases thrown by the records of the past. Will the earnings of a single year or of five years or of ten years past most closely approach the future earnings on which the value depends? Nobody can answer, or at least nobody ever has answered, that question.

However, it is important to point out that the rule or practice applied to the valuation of railroads should in spirit and equity be consistent with the rule applied to other classes of property. This may be illustrated by reference to Wisconsin practice. In Wisconsin railroads are assessed by the state and pay a single or

state tax equal to the average tax—state, county, and local—paid by the general property of the state. The railroads are assessed at full value, and in computing this average rate other property is estimated or appraised at full value also.[1] In arriving at the value of railroads, net earnings, stock and bond quotations, and the other elements of valuation are usually based on a five years' survey. The average net earnings for five years is the most important single element in the Wisconsin valuation of railways for taxation. Similarly, in the valuation of general property sales of real estate for five years past constitute by far the most important ingredient or factor. Both averages tone down the valuation that might otherwise be secured, but it is believed that the degree of "toning" is about the same in both cases.

In this connection it may be noted that the valuation of railroads, based as it is upon net earnings, includes large amounts of intangible value which commonly escape taxation in the case of other properties. This problem has been considered by a committee of the National Tax Association, which, on this point, reported as follows:

> Abstractly considered, there seems to be no doubt that it is inconsistent with the principle of equality to value the property of public-service corporations by methods that include intangible values and to value other property by methods that exclude them. Since we do not consider it practicable to introduce methods of valuing public-service corporations that shall exclude these elements of value and tax the companies upon the valuation of their tangible assets only, we hold that equality can be reached only by including the same elements in the valuation of other classes of property that are not given a separate classification. With corporations this can be done without difficulty. With other classes of property and business we believe it is extremely difficult, and probably impossible, to tax intangible assets equally under any system of property taxation, and that the difficulty cannot be solved until the states are ready to adopt some form of income taxation. In other words, the inequality which we encounter at this point is inherent in the nature of the present system of state and local taxation and cannot be eradicated without fundamental changes in this system.

[1] The importance of this equalization of rate can scarcely be exaggerated. In many states the assessment of railroad property has been improved and perfected much more rapidly than the assessment of other property, and unless conscious and fair-minded effort be made to equate the two, one or the other is almost sure to suffer. See "Report of Committee on Taxation of Public Service Corporations," *Proceedings of the Seventh Annual Conference of the National Tax Association*, p. 383.

In this respect, again, an earnest effort to achieve real equality has been made in the state of Wisconsin. A state income tax has been introduced in order primarily to cover that element of tax-paying ability not touched by the property tax as it is applied to the ordinary corporation or citizen. Because this element is, however, fairly represented in the valuation of railroads for purposes of taxation, they are exempted from the state income tax.

IV

If it is probable future earnings which control, it follows that there must be in railroad valuations a very large and important speculative element, an element of human judgment. This element of judgment is absolutely inseparable from *ad valorem* taxation. There are some railroads in every state which show no net earnings, and more which would show none if accounts were kept with stern accuracy and depreciation and maintenance properly treated. There are some railroads in every state whose net earnings are almost certain to decline in the future and others headed for inevitable bankruptcy or, like the logging roads in Wisconsin, destined to be torn up in the near future. On the other hand, there are some railroads in every state whose net earnings are practically sure to increase rapidly in the near future. These possibilities must be taken into account.

It may, however, be asked: Ought we not to await the event before measuring the tax, i.e., levy on the earnings if they have earnings now and wait until future earnings are actually realized if there are no present earnings? That is a question in taxation, not in valuation, and involves the whole subject of whether taxes should be on the basis of income or capital, whether they should touch earning power or realized wealth, whether they should be measured by ability or possession. No more important question could be raised; but its discussion is a matter primarily of taxation rather than of valuation.

It may be worth while at this point, nevertheless, to register one conviction which, for brevity, may be expressed in personal terms. Some years ago I was an advocate of the gross earnings as contrasted with the *ad valorem* method of railroad taxation. Experience with

an *ad valorem* tax on the Wisconsin Tax Commission, however, has convinced me personally of its superiority to the kind of gross-earnings tax now employed in this country. Few students of this subject sufficiently appreciate the vast range in the ratio of operating expense to gross earnings among the railroads of this country. The unsuccessful roads are far more numerous than is ordinarily thought. In the state of Wisconsin there are many roads whose operating expenses constitute more than 75 per cent of their gross earnings, and there are others whose normal operating expense is ordinarily less than 30 per cent of their gross earnings. With such conditions prevalent a flat gross-earnings tax is viciously regressive. It imposes a burden whose real rate increases as the proportion of expense to earnings increases. There are undeniable elements of uncertainty in the *ad valorem* tax, but any group of men with common sense, using statistics easily available, can with a little care and thought make valuations which, imperfect as they may be, will produce taxes obviously more equitable than those based upon any flat gross-earnings tax. Ordinary human judgment has many frailties, but it can apportion taxes among the more prosperous and less prosperous railroads in a manner far more equitable than any proportional or flat gross-earnings tax could possibly do.

While this element of human judgment is inseparable from *ad valorem* taxation, and while it may be used in the hands of careful assessors to temper any mechanical calculation in the direction of greater equity and truth, it should not be used—as it has often been used—to cloak administrative guesswork or the mental caprice and ineptitude of assessing officers. There is a real danger of using "human judgment," like charity, to cover a multitude of administrative sins, and because of this fact assessing officers should inform railway officials in the frankest way of the methods employed in arriving at valuations. Because human judgment varies—starts fresh in the morning and grows less accurate at night—the starting-point of all railway assessments should be a mechanical system of valuation. Railroad systems are too complex, the factors of value too numerous, and the human mind too fallible to permit assessing officers to sit down and after a few

calculations estimate a value as they would appraise a city lot in a neighborhood with which they are familiar. A method of valuation taking the various factors into account in a rigid mechanical way should be used as a datum line or point of departure. The valuation so secured would have a presumption in its favor and should be changed only for cause.

V

Such a mechanical method of valuation is used in the state of Wisconsin, and it raises so many questions of detail that it will be possible only to describe it, leaving the reasons for its adoption to suggest themselves, with a few explanations, however, at particularly important places.

First of all the abnormal railroads, which must be treated individually, are eliminated. The smallest railroad in Wisconsin is owned and operated entirely by two men and was valued at $7,000 last year; the largest was valued at $117,250,000 and paid a tax of $1,626,730. This will illustrate the absolute necessity of classifying railroads for purposes of valuation.

The remaining normal roads are classified into groups containing roads of similar standing, and separate valuations are prepared by capitalizing average gross earnings for five years, gross earnings for one (the latest) year, average net earnings for five years, and net earnings for one (the latest) year. In addition we have the cost of reduplication in present condition and a modified form of the stock and bond method, which we are accustomed to call the Haugen method, after the chairman of the Wisconsin Tax Commission, who devised it. This method consists in subtracting from net earnings interest paid on bonds, capitalizing the remainder, and adding to the amount so secured the market value of bonds. Four varieties of this method are secured: one, a state valuation resting upon the net earnings and bond interest assigned to Wisconsin, the other three being system valuations prorated to Wisconsin on the basis of track mileage, gross earnings, and net earnings. An average of the four valuations so secured is usually combined with the other figures to secure the mechanical valuation desired. It may be stated in passing that the stock and bond

valuations proper are prepared and are before the commission, but are not given much weight in the appraisal of large interstate roads, for reasons which I need not set forth. In the case of smaller roads, however, where it is possible both to value the non-operating property and at the same time to get quotations on the securities involved, the stock and bond plan offers an important and tenable method of valuation.

To return to the mechanical valuation under discussion, it was pointed out that valuations are prepared on six bases. These valuations are then combined into a weighted average, as shown below. It should be noted that in accordance with experience and with well-known statistical laws, errors in weights are usually not significant and the weights might be modified considerably without materially changing the result.

	Weight
Gross earnings average for five years	10
Gross earnings for one year	5
Net earnings average for five years	35
Net earnings for one year	10
Cost of reduplication present condition	10
Average of Haugen valuations	30
Total	100

This process raises many questions, chief among which is: How are rates secured by which the gross and net earnings are capitalized? For several years past, not including the present year, these rates were secured by reference to the assessment of the preceding year. It was assumed that while these assessments might have been wrong for individual railroads, they were correct for groups of roads of similar size. Accordingly the railroads were classified into five groups, aggregates computed, and the rates ascertained at which it would be necessary to capitalize gross and net earnings to secure the assessments actually reached. These group rates were then applied to the earnings of the separate roads to secure the various valuations combined in the weighted average. In the group of largest roads the following rates of capitalization were employed in the assessment of 1913: gross earnings (average) for five years were capitalized at 18.47 per cent; gross earnings

for one year were capitalized at 19.63 per cent; net earnings (average) for five years were capitalized at 5.38 per cent; and net earnings for one year were capitalized at 5.16 per cent.

Criticism immediately suggests itself. The question arises whether this process is not an instance of dangerous statistical inbreeding. The answer is, first, that this method is used in connection with a modified stock and bond method and is constantly checked by reference to market rates of interest actually earned on the securities in question. Secondly, it must be remembered that these assessments have been made with care for a number of years in Wisconsin, beginning with a complete physical inventory and appraisal in 1904 and a thorough study of capitalization rates along the lines made familiar by Henry C. Adams, B. H. Meyer, and William J. Meyers in *Census Bulletin 21*.[1]

Finally, it is fitting and desirable in tax valuations that, other things being equal, the future should be guided by the past, and

	1913	1914	Weights
Relative average gross earnings, 5 years	100	103.3	15
Relative average gross earnings, 1 year	100	99.7	5
Relative average net earnings, 5 years	100	101.3	30
Relative average net earnings, 1 year	100	110.8	10
Relative modified stock and bond valuation	100	97.9	25
Relative cost of reduplication in present condition	100	112.3	15
Simple average	....	104.21	....
Weighted average	....	103.27	....

Assessment 1913	$100,000,000
Suggested assessment 1914	$103,270,000

that violent changes should not be made without the strongest reasons therefor. As a matter of fact we are now experimenting with an alternating mechanical valuation resting wholly on the variation of conditions within the past year. In this method we

[1] That part of the census method which involves stock as distinguished from bonds, and requires the inclusion of earnings expended for physical and financial betterments of all kinds, seems questionable. The modified stock and bond or Haugen method appears to be much simpler and to combine all the good elements of the census plan. Bonds are taken at their actual market value, and the only amount capitalized is represented by the excess of operating earnings over bond interest. The rate of capitalization to be employed for this excess or surplus is determined by reference to general market conditions and to the actual rate of annual return upon the bonds themselves.

compute the variation per cent in gross earnings and net earnings, modified stock and bond valuation, and cost of reduplication in present condition. The variations or index numbers so secured are averaged and this average is applied to the assessment of the preceding year, as shown in the table on p. 14.

VI

The mechanical or average valuation which we have been discussing supplies only a starting-point. It has a presumption in its favor and is not lightly changed; but after being computed it is compared and studied in connection with the history of the railroad in the past year, general market conditions, and valuations made on other bases. At least ten such valuations in addition to the six included in the average are prepared. It is at this point that the exercise of judgment enters. Particular attention is given to the maintenance charges per mile, to the general maintenance policy of the road, and the extent to which depreciation is recognized. It is because of the varying practice in this connection that valuations are secured by capitalizing gross as well as net earnings. In the case of electric railways, it may be interpolated that we recompute the depreciation for each company on our own basis in order that uniform treatment may be accorded to this expense item.

After such comparison and study preliminary assessments are entered, of which the railways are advised and which they are entitled to criticize and discuss with the commission before final valuations are entered. Few railroads now avail themselves of this opportunity for further argument and statement; but whether they do so or not the valuations are checked by a cross comparison showing the percentage which the tax bears to the cost of reduplication, to the average gross earnings for five years and one year, to the average net earnings for five years and one year. This comparison is most helpful and frequently brings to light inconsistencies which up to this point had escaped attention. When these inconsistencies are smoothed out the appraisal is finished.

VII

In conclusion it may be stated that the physical valuation or ascertainment of the cost of reduplication is altogether worth

while—worth its cost. In the case of newly constructed roads it is likely to prove the most important element in the valuation process; and to have this information always strengthens the confidence of assessing officials. In the case of very prosperous or very unfortunate properties the physical valuation must be used with great caution, but even in such cases it must be given some weight, because as between two roads having exactly the same net earnings, the one whose properties are physically in better condition is the more valuable. And it will be further noted that as rate regulation becomes more perfect and general the actual market value of railway property is likely to approach more closely to the cost of reduplication, and the latter element should be given increasing weight as time passes.

Finally, it should be noted that the cost of such a system as is employed in Wisconsin is not excessive. The cost of the first physical valuation is comparatively high. The first such valuation in Wisconsin, made in 1903–4, cost a little less than $27,000. Thereafter, by applying the additions and deductions from property accounts, by changing unit prices and allowing for changes in condition, the appraisal can be kept up to date at small expense. The engineering corps used for that purpose in Wisconsin spends more time in valuing street railways and miscellaneous public utilities than it does in valuing steam railroads, but it cost the tax commission last year only $8,697. Of course the engineering corps in Wisconsin is used jointly by the railroad, or rate, commission and the tax commission, and the greater part of its time and cost are assigned to the railroad commission. But the railroad valuation could, I believe, be kept up to date at this expense even if the engineering corps were employed exclusively by the tax commission. The physical valuation is only part of the railway valuation, but the other cost does not exceed $3,400 a year; and $12,000 a year covers the entire cost of railway valuation in Wisconsin. The railroads last year were valued at $240,242,000, with a corresponding tax of $4,720,529.30. Surely it is worth while to spend $12,000 to get these valuations fair, both as among the railroads themselves and as between the railroads and the general tax-paying public.

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